IN THE CLAIMS

Please cancel claims 1-18 without prejudice.

Please add claims 19-45 as follows:

~~Claims~~WHAT IS CLAIMED IS:

1-18 (canceled)

19. (new) A semiconductor package comprising:

a semiconductor chip including an active surface with a plurality of chip contact areas;

a package substrate including a plurality of first contact areas and a plurality of second contact areas on its bottom surface, the chip being mounted on the package substrate with its active surface facing the package substrate;

a plurality of conducting means providing electrical contact between the chip contact areas and the first contact areas; and

a heat spreading means comprising a planar area and at least one protrusion, the planar area being attached to the upper surface of the chip and the protrusion being attached to the upper surface of the package substrate.

20. (new) The semiconductor package of claim 19, wherein two protrusions are provided, being located on opposite sides of the chip.

21. (new) The semiconductor package of claim 19, wherein the protrusions are provided along the whole length of two opposing sides of the package substrate.

22. (new) The semiconductor package of claim 19, wherein two opposing sides of the package are open.

23. (new) The semiconductor package of claim 19, comprising open-ended air tunnels extending from one side to the opposing side of the package are formed between the chip, the

heat spreading means and the package substrate.

24. (new) The semiconductor package of claim 19, wherein the heat spreading means is attached to the chip by thermally conductive adhesive means and to the package substrate by non-conductive adhesive means.

25. (new) The semiconductor package of claim 19, wherein the chip is mounted to a redistribution board using a flip-chip technique.

26. (new) The semiconductor package of claim 19, wherein the surfaces of the heat spreading means are at least in part black.

27. (new) A matrix package comprising:

a module heat spreading means comprising:

a plurality of sawing grooves on its upper surface; and

a plurality of grooves and protrusions in its bottom surface,

thermally conductive adhesive means to the grooves and non-conductive adhesive means to the protrusions of the module heat spreading means; and

a substrate comprising a matrix of package sites arranged in an array each including a chip and a package substrate,

wherein the module heat spreading means is positioned on the substrate so that the protrusions are in contact with the package substrates of the substrate and the grooves are connected to the upper passive surface of the chips.

28. (new) The matrix package of claim 27, wherein the plurality of protrusions are positioned approximately centrally between rows of chips.

29. (new) The matrix package of claim 27, wherein the plurality of grooves are positioned approximately parallel to each other.

30. (new) The matrix package of claim 27, wherein the plurality of sawing grooves are arranged in a square grid array.

31. (new) The matrix package of claim 27, wherein the package sites are arranged in a square grid array.

32. (new) The matrix package of claim 30, wherein the sawing grooves are arranged in a square grid array which has approximately the same dimensions and orientation as the square grid array of the package sites.

33. (new) The matrix package of claim 27, wherein the module heat spreading means is attached to the chip by thermally conductive adhesive means and to the package substrate by non-conductive adhesive means.

34. (new) The matrix package of claim 27, wherein the chips are mounted on the package sites using a flip-chip technique.

35. (new) A semiconductor package comprising:

a semiconductor chip including an active surface with a plurality of chip contact areas;

a package substrate including a plurality of first contact areas and a plurality of second contact areas on its bottom surface, the chip being mounted on the package substrate with its active surface facing the package substrate;

a plurality of conductors providing electrical contact between the chip contact areas and the first contact areas; and

a heat spreader comprising a planar area and a plurality of protrusions, the planar area being attached to the upper surface of the chip and the protrusions being attached to the upper surface of the package substrate.

36. (new) The semiconductor package of claim 35, wherein two protrusions are provided, being located on opposite sides of the chip.

37. (new) The semiconductor package of claim 35, wherein the protrusions are provided along the whole length of two opposing sides of the package substrate.

38. (new) The semiconductor package of claim 35, wherein two opposing sides of the package are open.

39. (new) The semiconductor package of claim 35, comprising open-ended air tunnels extending from one side to the opposing side of the package are formed between the chip, the heat spreading means and the package substrate.

40. (new) The semiconductor package of claim 39; wherein the heat spreader is attached to the chip by thermally conductive adhesive means and to the package substrate by non-conductive adhesive means.

41. (new) The semiconductor package of claim 40, wherein the chip is mounted to a redistribution board using a flip-chip technique.

42. (new) The semiconductor package of claim 41, wherein the surfaces of the heat spreading means are at least in part black.

43. (new) A method to assemble a semiconductor package comprising:

providing a module heat spreading means comprising:

a plurality of sawing grooves on its upper surface; and

a plurality of grooves and protrusions in its bottom surface;

attaching thermally conductive adhesive means to the grooves and non-conductive adhesive means to the protrusions of the module heat spreading means;

providing a substrate comprising a matrix of package sites arranged in an array each including a chip and a package substrate;

positioning the module heat spreading means on the substrate so that the protrusions are in contact with the package substrates of the substrate and the groove is connected to the upper passive surface of the chip;

curing the adhesive means;

attaching a plurality of external contact means to the contact areas on the bottom surface of the package substrates of the substrate; and

singulating the individual semiconductor packages by using the sawing grooves in the upper surface of the module heat spreading means to guide the path of the saw blade.

44. (new) The method of claim 43, wherein the plurality of chips are mounted using the flip-chip technique to a redistribution board at each package site.

45. (new) A semiconductor package comprising:

a semiconductor chip including an active surface with a plurality of chip contact areas,

a package substrate including a plurality of first contact areas and a plurality of second contact areas on its bottom surface, the chip being mounted on the package substrate with its active surface facing the package substrate,

a plurality of conducting means providing electrical contact between the chip contact areas and the first contact areas, and

means for providing a heat spreader comprising a planar area and at least one protrusion, the planar area being attached to the upper surface of the chip and the protrusion being attached to the upper surface of the package substrate.